Iowa Farm Science

Volume 17 | Number 1 Article 2

7-1962

Can Mastitis Be Controlled?

John B. Herrick D.V.M.
Iowa State University

CAN MASTITIS BE CONTROLLED?

Antibiotics aren't the best controls for mastitis in dairy cows. Sound management and sanitation practices are the most effective weapons used against the disease. Here are more pointers to help control mastitis.

by John B. Herrick, D.V.M.

IF YOU'RE a typical dairyman, one of your major problems is the disease called mastitis. Actually, mastitis is any inflammation of a cow's mammary gland.

Mastitis is a costly disease. In the United States, mastitis causes losses estimated at 250 million dollars a year. Mastitis robs Iowa dairymen of an estimated 5 million dollars each year.

A questionnaire survey conducted in several states indicates that average annual losses range from $3 to $45 per cow because of mastitis. The average estimated loss is about $20 per cow. Your own records may indicate some of the costs in your herd. Various surveys show that, in the period of a year, about 35-45 percent of all cows in a given herd are infected with mastitis.

Approximately 100 tons of bulk antibiotics are used annually for treating mastitis. These drugs cost dairymen more than 35 million dollars just for mastitis treatments. In a study of 198 dairy farms, for example, 8,000 cows received 20,000 mastitis treatments in 1 year. This is an average of 2½ treatments per cow each year. Despite the large number of treatments, the number of cases of mastitis infection still continues at a high level.

Many Causes . . .

Bovine mastitis is a clinical term for a common ailment of dairy cattle. It is an infectious disease but not one that can be eradicated by eliminating a single causative agent.

Many factors contribute to mastitis. Some causes of mastitis can be removed from herds. But other causes exist in the soil, in manure and on the skin of cattle. These causes often are present wherever cows are kept, and all of the causes can't be eliminated. There are many different organisms that cause mastitis. Several types of bacteria — and even yeast — can cause mastitis. Injuries to the udder increase the chances for infection.

Mastitis in cattle once was thought to be caused mainly by bacteria called *Streptococcus agalactiae*. But in recent years, the *staphylococcus* bacteria has become more evident. At least 13 to 15 other types of organisms have been identified as the infectious agents causing mastitis. Any of these disease agents could be serious in a particular case of mastitis or in a herd outbreak.

Because they're so hard to control, staphylococci present one of the greatest problems in mastitis control. They may be the same type of bacteria that are so troublesome in human hospitals, but there are more than one type. These organisms are present on the skin of man and may cause infection in even a slight cut. Deep infections, such as boils or carbuncles, are caused by this organism. Staphylococci may be carried to cattle by humans.

Animals also carry staphylococci, and cattle may carry the organism on their udders. This is one reason for the numerous cases of mastitis infection caused by staphylococci. Tests indicate that the numbers of staphylococci organisms are increasing in many dairy herds. The organisms often exist in a herd without the owner's knowledge.

Treatment . . .

Damage caused by mastitis can be prevented only by reducing the chances for infections. This requires the use of good sanitation and day-by-day management practices. *No other disease of animals is so dependent upon management and sanitation as is the control of mastitis.*

Many cases of mastitis have been treated successfully. But some types of mastitis don't respond to treatment. Reinfection sometimes occurs so quickly after treatment that it may appear that the treatment isn't effective.

Continuous *treatment* with antibiotics may develop antibiotic-resistant organisms. Antibiotics used for treating mastitis can adulterate milk and still not effectively *control* the disease.

The importance of mastitis isn't a recent finding. Mastitis has existed for years in many dairy herds. Increased emphasis is being placed upon mastitis control rather than treatment. This is partly because of recent interest in preventing milk adulteration, the constant improvement in milk quality and the narrow profit margin in the dairy business. The

JOHN B. HERRICK is professor of veterinary medicine, Cooperative Extension Service.

same tactics or techniques used to control brucellosis, tuberculosis and some other animal diseases, however, don't successfully control mastitis.

Control Programs . . .

A national council composed of different segments of the dairy industry recently has been created to organize mastitis-control programs in several states.

A dairy management team was formed at Iowa State University in April 1958 to initiate a comprehensive program of mastitis control in Iowa. The four-man team is composed of an extension veterinarian, an extension agricultural engineer, an extension specialist in dairy production and one in dairy manufacturing.

This team has initiated a broad, integrated educational program about mastitis control and related problems which involve all segments of the Iowa dairy industry. This activity is called the "Iowa 4-M Project," denoting activities concerning milk, machines, mastitis and management.

The Iowa 4-M project involves a survey of about 50 dairy herds in a county. Members of the 4-M team study these dairy herds, analyze the problems connected with the dairy operation and provide educational programs to assist the dairymen with their problems. The herds studied serve as demonstration herds so other producers can see and adopt the mastitis-control and other improved management practices.

Pointers . . .

Here are some general suggestions for controlling mastitis:

- Recognize that an infection of a cow's mammary gland may result from many factors. Many of the causes are man-made. Every cow represents a separate problem and must be handled as an individual animal.
- Don't try to treat mastitis without first setting up a program to prevent the disease. Even the best treatment isn't the best method of control. Keep your dairy cows as clean and comfortable as possible. Provide large, well-bedded stalls for individual cows or large, well-bedded loafing sheds for the herd. Provide adequate, clean barnyard space. Fence dairy cows out of creeks and farm ponds. Clear pastures and lots of debris, loose barbed wire and other materials that may cause udder injury.
- Thoroughly check your milking machine and all of its equipment. Milking machine pumps sometimes are inadequate, lines may be too small or various parts of the machine may not function properly. Have a trained service technician regularly inspect your milking machine and repair it if the machine doesn't operate properly.
- Find out the extent of mastitis infection in your herd. The most dangerous cow in a herd is a chronically-infected cow in which the mastitis infection isn't obvious. A complete bacteriological examination of each cow in the herd is necessary to spot the infected animals, the types of infection that exist and the type of drug that will most positively affect this organism. Such examinations require laboratory apparatus and procedures and usually must be conducted by a veterinarian. Be prepared to sell cows that have infected udders or are chronic mastitis carriers. Once the health of each cow in your herd is determined, establish a milking order. Milk the "clean" cows first. Remove the infected cows from the milking string. Milk them separately from the mastitis-free cows.
- Thoroughly clean each cow's udder with warm, germicidal solution before attaching the milking machine to the cow. Cleaning the udder stimulates a cow to "let down" her milk. Attaching the machine before letdown can cause injury to the lining of the teat canal. Promptly remove the milking machine when a cow is milked out. Clean the milking machine teat cups after each cow is milked and before using them on the next cow. Thoroughly wash and sanitize the milking machine after each milking.

Mastitis can be reduced if you follow these fundamental management practices. The cost of controlling mastitis is a wise investment, if you consider the losses that result if you don't control the disease.

Despite the long existence of the disease, there's some lack of agreement among researchers in the best way to control mastitis. There are many things yet to be learned about the many causes of mastitis and ways of preventing the disease.

We need to know more about the effect of milking machines as a possible means of spreading mastitis, immunization as a preventive measure, the role of viral agents as causes of mastitis and many other factors. Research, therefore, must be continued to solve these problems.

One problem in the control of mastitis is that some dairymen aren't using what is already known about the keys to mastitis control: *Sanitation and good management practices.*

Iowa State's mastitis team (left to right): Vernon M. Meyer, extension agricultural engineer; John B. Herrick, extension veterinarian; Earl Wright, extension dairyman (manufacturing); and Donald E. Voelker, extension dairyman (production).